

Axiom and Declaration Networks CAF Expression of Interest

March 5th, 2014



Letter – Expression of Interest VIA ECFS

Chairman Thomas Wheeler
Commissioner Mignon Clyburn
Commissioner Jessica Rosenworcel
Commissioner Ajit Pai
Commissioner Michael O’Rielly
Jonathan Chambers
Federal Communications Commission
445 12th Street, SW 20024
Washington, DC

Re: Expression of Interest – Rural Broadband Trials Connect America Fund, WC Docket No. 10-90

Dear Chairman Wheeler, Commissioners, and Mr. Chambers:

This expression of interest for Connect America Fund (CAF) broadband operational and infrastructure funding to support rural communities is respectfully submitted on behalf of the Axiom Technologies. (Axiom) and Declaration Networks Group Inc. (DNG) for all eligible Washington and Hancock County, Maine census blocks under the Rural Broadband Trials program announced at the January 30th FCC Open Meeting.

Background

The Universal Service Fund (USF) transition from wireline telecommunications to establish a viable and sustainable broadband ecosystem in non-urban areas is essential to our quality of life and local economies. Access to affordable broadband is essential in the 21st century global economy for a significant portion of the country to establishing and sustaining a healthy and growing US and regional economy, providing individual opportunity for commerce, healthcare, education, information, entertainment, government services, and, most importantly, toward job creation. The CAF program provides an

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essential link in connecting America's natural resources, agricultural and recreational regions of the nation.

Provide background information for your business: Name, location, history, services currently provided, number of subscribers, and goals for the future.

Declaration Networks Group and Axiom Technologies have collaborated to lead this Expression of Interest which reflects coordinated interest from communities, institutions, and public-private partners that are interested in developing plans to file subsequent proposals, and pilot network funding requests with the FCC's CAF Broadband Experiment for upgrading broadband network infrastructure in rural communities throughout Maine, and specifically in Washington and Hancock Counties.



Axiom Overview

Axiom is a telecommunications company headquartered in Machias, Maine that has been creating and developing solutions for rural broadband deployment since 2005. Axiom is a "last-mile" broadband provider that has brought high-speed Internet service to over 100 regions (46 towns) with over 90 Wireless Access Points in Washington County, creating an umbrella that covers over 2,500 square miles. Axiom also provides DSL service and fiberoptic connectivity via the Maine Fiber Company's Three Ring Binder Project, a middle mile, fiberoptic, infrastructure BTOP project.

Axiom was awarded a \$1.4 million Broadband Technology Opportunity Program (BTOP) grant from the U.S. Dept. of Commerce in September 2010 for the "Washington County Education and Employment through Sustainable Broadband Adoption" Project. The project took advantage of Axiom's last-mile broadband technology and provided educational and employment opportunities to sustain and grow three of the largest industries in the County; blueberry farming, fishing and healthcare.

In December 2013, Axiom Technologies, in collaboration with Sunrise County Economic Council, received \$300,000.00 in funding from the John T. Gorman Foundation to provide digital literacy classes in Washington County in 2013 and 2014. In the past year, over 1,000 adult learners have taken computer skills classes; Introductory to Computers, Microsoft Word, Excel, Outlook, Publisher, PowerPoint, QuickBooks, PhotoShop, WordPress and Social Media. The classes are held at the Axiom classroom and training center in Machias and to date have been held at 30 locations throughout the County.

Axiom's goal and mission is "To provide broadband to the unserved homes and businesses in Washington County and throughout Maine. We will not stop until this is accomplished."

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DNG Overview

Declaration Networks Group, a Delaware corporation located in Virginia, is a leader in next generation network deployments and establishes sustainable broadband services across the country. DNG has been an early advocate for the development of a robust White Space ecosystem that will establish viable broadband access networks in secondary and rural markets. DNG is a Co-Founder and the principal architect in the creation and development of the AIR.U initiative, a consortium of higher education groups, Microsoft, and Google, and was established to deploy high capacity broadband networks leveraging White Space technologies.

DNG Mission and Guiding Principles

DNG's mission is to establish viable and sustainable broadband ecosystems for local communities, leveraging a variety of technologies best suited for the local service area and users.

DNG believes that a combination of fiber, wireless, and emerging White Space technologies will future proof local broadband ecosystems, provide healthy competition, catalyze innovation, fill gaps from existing providers and extend internet services in support of end-users at work, play and home environments. Investments in broadband infrastructure today should be focused on how users access data and use Internet services requiring both portability and reliability with standard cell phones and smart phone devices. The emergence of Telehealth, expansion of education and job training, public safety and electronic commerce requires a more flexible broadband local infrastructure for sustainable operations.

AIR.U Mission

The AIR.U mission is to accelerate deployment of next generation networks in educational communities by creating a Nationwide sustainable program deploying high capacity broadband networks leveraging White Spaces. Announced in 2012, AIR.U is a consortium of education associations, public interest groups and high-tech companies organized to establish high capacity White Space networks supporting wireless broadband applications in underserved campuses and their surrounding communities. The founding Higher Ed organizations collectively represent over 500 colleges and universities nationwide and include the United Negro College Fund, the New England Board of Higher Education, the Corporation for Education Network Initiatives in California (CENIC), West Virginia Network (WVNET), the National Institute for Technology in Liberal Education, and Gig.U, a consortium of 37 major universities committed to accelerating world-leading broadband connectivity and services. Google, Microsoft, New America Foundation, Declaration Networks Group, and the Appalachian Regional Commission (ARC) are also founding partners.

DNG designs, deploys and operates high capacity wireless access solutions leveraging White Spaces and other technologies for private networks, commercial and consumers markets. DNG provides consulting and operations expertise for its clients and partners.

The company operates with different business models providing managed wireless access networks leveraging White Space and other wireless and fiber technologies. DNG utilizes

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its White Space and broadband expertise to customize and integrate wireless and White Space technologies as complementary or primary local broadband access networks. Our high capacity access solutions also include best of breed implementations of wired and wireless technologies.

Through collaborative engagements with individual communities and partners, DNG designs, deploys and operates managed local or regional networks tailored for private and commercial applications. DNG provides systems, network, and business integration and program management expertise to create and deploy private networks, public networks and commercial services that leverage existing and new infrastructure with municipalities, Higher-Ed Institutions, anchor tenants and communities.

AXIOM / DNG

DNG will collaborate with Axiom to design, deploy and operate a White Space local access network customized for the local geographic terrain that is interconnected to Axiom's existing network infrastructure and operations. These networks will interconnect into other state fiber and broadband networks. The White Space network will support residential and business internet access for end users, as well as, public Wi Fi access for certain areas of the community. Axiom will provide retail services for residential and commercial users, leverage the broadband infrastructure, internet access and internet support services. DNG will also develop new services supporting smart phones, M2M communication and other services.

Axiom provides adult education and broadband adoption training for the state. The DNG AIR.U program can provide its network solution using White Space technology to deliver broadband services to training centers, K-12 Elementary and Middle Schools within the service areas. This deployment of the DNG AIR.U Network Solution will enable Axiom to deliver online training programs and also enable online testing of skills, which is a goal of the Maine Department of Education.

Geographic Territory & Proposed Technology

Axiom and DNG are interested in applying for all eligible CAF areas in Washington and Hancock Counties and is considering expanding to other counties in the state, as this aligns with our individual missions, business objectives and capabilities. Our guiding principles will include:

- Establishing robust fiber and microwave middle mile transport and backhaul networks as an extension of the current BTOP and Axiom networks.
- Initially establish a wireless broadband access network to extend the internet to target service areas providing a minimum of 5 Mbps for residential and up to 100 Mbps for business and anchor institutions. This capacity will be expanded to higher capacity access as needs develop.
- Extend fiber connectivity to community anchor institutions and larger business or multi dwelling units as needed.
- Establish wholesale transport and access rates for other service providers to allow retail service provider services to promote a competitive market for voice and internet services.

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- Enhance wireless services to support FirstNet extension, Telemedicine and extended learning to service areas as those programs are developed in the next couple of years.

The selection of particular service areas will be prioritized based on the amount of CAF funding provided and program compliance rules established by the FCC. In general, we would encourage the FCC to include funding for detail network design, deployment of backbone and local transport networks, buy down of residential and small business CPE to increase adoption and affordability, allow start up operational expenses for first two years to improve sustainability and adoption in these higher cost service areas.

For many rural farming locations that have been difficult to serve with traditional approaches, White Space and other wireless technologies will provide efficient coverage in rural geographies extending internet and voice networks for the underserved service areas. Axiom and DNG will work with agricultural and natural resource programs to enhance smart farming and monitoring services with local and regional programs. Current television services can be adequately delivered with satellite services today, but a terrestrial wireless or White Spaces network would address the users' main concern of faster and more reliable internet, voice and first responder access for their communities. Portable services supported with smart phone devices are more important for future funding consideration as over 70% of users access the internet with these devices.

List of Anchor Institutions

If you plan to connect anchor institutions (schools, libraries, hospitals, community centers, etc.) list them in this section.

Connecting all community anchor institutions in the CAF eligible and awarded areas is the stated goal. The project could connect approximately 36 libraries, 98 public safety entities, 50 municipalities, 65 healthcare facilities and 16 community centers in the two counties.

State and/or Local or Tribal Government Participation in and/or Support for Project

Briefly describe collaborations with local and/or Tribal government entities in executing your project. Include plans to obtain rights of way and permits.

The Passamaquoddy Tribal government allows Axiom use of two towers, at no cost, to provide 3 Mb. fixed wireless broadband to the residents in Indian Township.

Existing Providers

The state broadband maps and FCC listings adequately document the existing providers for these purposes.

Washington County broadband providers include Axiom Technologies, Fairpoint Communications, Time Warner Cable, Cornerstone Communications, GWI and Pioneer Broadband. Axiom works closely with all entities. Broadband services include DSL, cable, wireless starting at \$29.99 for residential services. At present, there is limited Fiberoptics and high-capacity connectivity.

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Project Timeline

Project timelines will be determined by the funding and program requirements established by the FCC CAF rulings. Axiom and DNG would envision planning and implementing initial networks within six months of award leveraging the existing network and company capabilities.

A complete project timeline will be developed during the full application process.

Scalability

The Axiom and DNG approach provides a reasonable path to creating a sustainable and affordable broadband ecosystem for Maine communities. The fiber network and wireless strategy would allow initial areas to be address with high speed access and provide a foundation for expanding service territories and services within months of deployment. Combining adoption, education and public safety services will improve services and adoption in the target service areas.

Total Business Investment

Current USF models provide reasonable guidelines for fiber and wireless network infrastructure investment guidelines. Cost for engineering, right of way access, legal agreements and start up marketing and operations costs are required for these hard to serve low density areas. A large portion of the former High Cost Fund should be allocated to this innovative program to promote competition and develop a sustainable broadband ecosystem.

Investment Needed

To facilitate the development of a sustainable competitive access network, the FCC should establish funding guidelines that provide detailed engineering designs, deployment costs for the networks, subsidies for CPE devices for low density markets to low adoption barriers and improve affordability for residential and small business customers, and allow coverage of operating expenses during roll out and implementation periods.

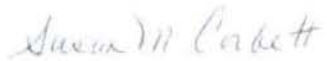
Total Project Cost

Estimated project costs for Washington County \$8,200,000 and Hancock County \$7,500,000.

Thank you for considering our Expression of Interest in your decisions about the amount of funding that will be allocated in the Rural Broadband Trials. We commend you in this effort to assist in connecting rural communities and are ready to help close the digital divide.

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Sincerely,



Susan Corbett
CEO
Axiom Technologies Inc.



Robert Nichols
CEO
Declaration Networks Group Inc.